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Determinants Of Dividend – A Study With Reference to Selected Companies in India

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ABSTRACT

Investment activities by individuals have increased many fold especially in stock market securities. Investors' requirement ultimately boils down to dividend and market value enhancement which gives them their much required earnings. Whether the management of companies take care of this aspect was studied with reference to select regularly traded continuously dividend paying companies in the BSE. Theoretically identified and quantifiable determinants of dividend were taken and variables numbering twelve, were considered to ascertain whether the companies follow accepted practices. Regression analysis confirmed that around 66% of the variables identified, determined the DPS of the select companies.

Keywords :

DETERMINANTS OF DIVIDEND – A STUDY WITH REFERENCE TO SELECTED COMPANIES IN INDIA

Investments with an intention to earn some extra rupees are very widely practiced today. Investment has come a long way from the time when it was confined to gold jewels and/or bullion, to investment in gilt edged securities, to the present state of wide participation in capital market securities like shares and debentures of public limited companies. This change had been the result of a number of factors which ultimately has increased the confidence of the investors in the proliferating quantum of securities in the investment market. In other words what was previously a restricted domain of a privileged few has become wide open to any discerning person having extra rupees which he wants to stack away.

Dividing the profits amongst its shareholders becomes imperative for every company. This is mainly because of the fact that dividend is seen as a main source of income by the investors. Dividends are looked upon not only as a source of income but also to an extent, according to one school of thought, determine the value of the stocks in the market, the variations in which contribute to the overall income of the investor. Meeting the expectations or requirements of the shareholders is an important consideration on the part of the companies.

Dividend also carries information value in the sense, payment of dividend is considered by the market as well as the shareholders, to signal the financial health and operational efficiency of the business. In the absence of dividend, however healthy and efficient a company is, it might send out wrong signals to the market and shareholders, which the company would like to avoid. The company would also consider a situation in which without paying out dividend if earnings are accumulated, it might in the long run, lead to under-capitalisation and its harmful effects. Moreover in the present capital market conditions, where the institutional investors play a major role in investing in shares of a company, meeting the eligibility criteria of such institutions namely, payment of regular dividends is an important factor.

It is because of the above that most of the companies are required to pay some amount of dividend, the actual amount being decided considering several determinants. Even though the amount of dividend to be declared is a decision solely in the hands of the management, in the sense the shareholders do not legally have any say in determining the quantum of

dividend, in practice the finance manager is not given total freedom especially with regard to shareholders' consideration in deciding the quantum of dividend.

Statement of the problem

Many considerations and factors both legal and financial will have to be taken into account by the finance manager when deciding on payment of dividend. The long-run considerations and the short-term factors may be stated as to constitute the dividend policies and practices of the company.

Dividend policy substantially affects the financial structure of a corporation, the flow of funds, liquidity, share prices and the investor satisfaction with regard to return on his investment. It helps in achieving the main financial objective of a company namely maximisation of its value. From the investors' point of view, regularity in income received and market value enhancement are important considerations in the investment decision. To the extent dividend decision contributes to satisfaction of these requirements it affects the welfare of the investing public. Whether this has been taken care of by companies in which public are substantially interested is to be ascertained.

Many earlier studies have identified several factors to have had an impact in determining the dividend policy and practices of a company. These determinants can be broadly categorised as the companies' operations related, the company management's dispositions, legal aspects, share holders' requirements and market aspects. Among the above factors the companies' operation related factors based on financial information alone are being considered as factors for the present analysis. Such factors are identified, appropriate measures of each of the factors are selected, which forms the identified variables and are subject to statistical analysis. The companies' operational aspects may further be categorised as profit related, financial structure or capital structure related and liquidity related.

Review of literature

Rozeff (1979) analysed dividend payout ratios for a cross-section of 1,000 unregulated U.S. firms from 1974 to 1980 with regard to firm-specific determinants. Casting the payout decision as a tradeoff between transaction costs and agency costs, his model includes variables intended to capture the effects of investment opportunities and earnings variability on dividend payout. In addition, it includes variables that serve

as proxies for agency cost effects on dividend decisions. All the variables were found to be highly significant with the expected signs, and the model accounts for nearly half of the variation in dividend payout ratios for his sample.

Michael J. Brennan and Anjan V. Thakor (1990) developed a theory of choice among alternative procedures for distributing cash from corporations to shareholders. Despite the preferential tax treatment of capital gains for individual investors, it is shown that a majority of a firm's shareholders may support a dividend payment for small distributions. For larger distributions an open market stock repurchase is likely to be preferred by a majority of shareholders, and for the largest distributions tender offer repurchases dominate.

PruPitt and Gitman (1991) asked the financial managers of 1,000 large U.S. firms to describe the interplay among the investment, financing, and dividend decisions in their firms. The results suggest that the following factors are important influences on the amount of dividends paid: current and past years' profits, the year-to-year variability of earnings, the growth rate of earnings, and prior years' dividends.

Mahapatra and Sahu (1993) analyzed the determinants of dividend policy using the models developed by Linter (1956), Darling (1957) and Brittain (1966), for a sample of 90 companies for the period 1977-78 – 1988-89. They found that cash flow is a major determinant of dividend followed by net earnings. Further, their analysis shows that past dividend and not past earnings is a significant factor in influencing the dividend decision of firms.

Mishra and Narender (1996) analyzed the dividend policies of 39 state-owned enterprises (SOE) in India for the period 1984-85 to 1993-94. They found that earning per share (EPS) is a major factor in determining the dividend payout of SOEs.

Baker, Veit and Powell (2001) studied the factors that have a bearing on dividend policy decisions of corporate firms traded on the NASDAQ. The study, based on sample survey response of 188 firms out of a total of 630 firms that paid dividend in each quarter of calendar years 1996 and 1997, finds that the following four factors have a significant impact on the dividend decision; pattern of past dividends, stability of earnings, and the level of current and future expected earnings. The study also finds statistically significant differences in the importance that the managers attach to the dividend policy in different industries such as financial versus non financial firms.

Narsimhan and Vijayalakshmi (2002) analyzed the influence of ownership structure on dividend payout of 186 manufacturing firms. Regression analysis showed that promoters' holding as of September, 2001 has no influence on average dividend payout for the period 1997-2001.

Shankar and Gayathri (2006) in their study have made use of regression and partial correlation tools in assessing the impact of the variables on market value, by identifying relevant data. This model has been applied in the present study since it was found to be an appropriate one.

The above review shows that studies on determinants have identified factors that have important influences on the amount of dividends paid to be: current and past year's profits, represented as net earnings, reserves, EPS, rates of return on varied bases, the year-to-year variability of earnings, the growth rate of earnings, prior years' dividends, expected future growth and cash flow. The measures identified by such studies were used wherever appropriate and with relevant modifications and improvements. Similarly statistical tools for analysis were also considered.

OBJECTIVES OF THE STUDY

The following are the objectives set:

1. To identify the determinants of dividend of the select companies.

2. To ascertain the extent of influence of such determinants on the dividends paid by the companies.
3. To draw conclusions based on the findings.

Sampling

Due to the large number of companies established and operating in India and since the public are not interested either as investors or as resource users, the study is confined to only public limited companies in which the public are substantially interested. Since this study relates to an analysis of determinants of dividend policies and practices of companies, it had to be restricted to the dividend paying companies only. In other words, the study is proposed to be restricted to widely traded and dividend paying companies listed in the Bombay Stock Exchange (BSE). There were 3100 companies listed in the BSE. However these 3100 listed companies were neither regularly traded nor regularly dividend paying companies. Out of the 3100 listed companies, 820 were dividend paying companies but not regularly dividend paying ones. Out of these, 598 companies were listed under Group A category in the BSE which means they were traded on a regular basis in the exchange. These 598 companies satisfy both the criteria of dividend paying and regularly traded stocks. Since study of dividend practices required continuous payment of dividends, those companies which satisfy both the requirements namely continuously and regularly paying dividends during the study period 1999-2008 and also regularly traded, were selected for this study. The number of such companies was 120. These were identified as the companies for this study and data were collected. The scrutiny of the data showed that for some of the companies, like banks and insurance companies, the data were found not to be compatible with the data of other companies, while for some others the data were highly inconsistent especially with relation to key variables such as working capital, annualized dividend, etc. Since such inconsistency is likely to have an adverse impact on results of statistical analysis, they had to be eliminated in order to make a meaningful analysis. Such companies numbered 37. Hence the remaining 83 companies constitute the selected companies and were subject to analysis.

METHODOLOGY

The financial data used for the purpose of this analysis was obtained from data bases including EBSCO, Pro Quest, Capital Line Database, CMIE – PROWESS, Cygnus Knowledge Portal, ICFAI online Database. Secondary sources of data have been heavily relied on for its study. Financial information periodically published by the companies form the basic data of this study. The study had been confined to such secondary data which are obtained from the annual reports of the selected companies. Primary data of the required type could not be obtained, since most of the companies stated that they could not discuss or reveal policy matters that too, which related to the highest level of decision making body.

Based on the review of existing literature and theory, the factors identified and classified as, profitability, capital structure and liquidity are selected and the measures identified for the quantification of the factors are as follows:

Profitability has been identified in many studies as an important determinant, obviously so because dividend is distributed out of profits. The measures used on the other hand had been different. To represent different aspects of profitability and profits, the ratio of earnings to different bases namely, net worth, capital employed, net working capital and EPS have been identified.

Interest payment on borrowed capital has an impact on EPS mainly due to tax deductibility giving raise to financial leverage. Debt tax shield was measured as the ratio of earnings after interest and tax to EBIT.

The measure used for degree of financial leverage is the proportion of percentage change in EPS to percentage change in earnings before interest and taxes.

Capital structure was measured as debt-equity ratio that is, the ratio of total debt to net worth. Yet another factor signifying the impact of debt composition in the capital is the ratio of interest paid to EBIT.

Growth is considered an important factor in dividend decisions since growing companies whose fund requirements would be very high would adopt only a conservative policy. Hence growth is identified as a variable for this study purpose. Growth of the companies was measured as the rate of growth in fixed assets calculated as the change in the value of fixed assets over the previous year.

Firms adopting a stable dividend policy will have to consider the amount of accumulated or retained profits since in the periods of low profits they rely on the retained earnings. Hence this factor is identified as a variable for this study purpose and is measured as the ratio of reserves to share capital.

Since liquidity is vital in payment of dividends which needs to be distributed within a very short period the current ratio which would reveal the overall liquidity position is identified as a variable.

MODEL SPECIFICATION

Multiple regression technique has been used to analyse the impact of the selected independent variables namely return on net-worth (RONW), return on capital employed (ROCE), return on net working capital (RONWC), EPS, net profit ratio, debt-equity ratio, current ratio, growth in fixed assets, interest coverage ratio, interest tax shield, reserves to share capital and degree of financial leverage, on the dependent variable namely dividend per share (DPS). DPS is identified as the dependent variable since it would be uniform per unit for all the companies rather than the absolute value of dividend and hence amenable for statistical analysis.

The estimated regression model is as follows;

$$D = \text{Const} + b_1 + b_2 + b_3 + b_4 + b_5 + b_6 + \dots + b_{12} + \text{residual.}$$

where D is dividend per share, b1 is regression coefficient of RONW, b2 is regression coefficient of RONWC, b3 is regression coefficient of EPS, b4 is regression coefficient of ROCE, b5 is regression coefficient of net profit ratio, b6 is regression coefficient of debt-equity ratio, b7 is regression coefficient of current ratio, b8 is regression coefficient of growth in fixed assets, b9 is regression coefficient of interest coverage ratio, b10 is regression coefficient of interest tax shield, b11 is regression coefficient of reserves to share capital, and b12 is regression coefficient of degree of financial leverage.

RESULTS OF REGRESSION ANALYSIS

Using multiple regression technique the influence of selected variables return on net-worth (RONW), return on capital employed (ROCE), return on net working capital (RONWC), EPS, net profit ratio, debt-equity ratio, current ratio, growth in fixed assets, interest coverage ratio, interest tax shield, reserves to share capital and degree of financial leverage on dividend per share were analysed and the results are shown in Tables 1.1, 1.2, 1.3 and 1.4.

**TABLE 1.1
SUMMARY OF REGRESSION ANALYSIS OF INDEPENDENT VARIABLES ON DIVIDEND PER SHARE**

R	R Square	Adjusted R square	Std. Error of the Estimate	Durbin-Watson
0.815	0.664	0.659	4.00546	0.916

R is the correlation between the observed and predicted values of the dependent variable. The values of R would range from 0 to 1. Larger the value of R stronger is the relationship.

R2 is the multiple correlation or the coefficient of multiple determination. The values of R2 range from 0 to 1. Smaller values indicate that the model does not fit the data well. Adjusted

R square is an adjustment for the fact that when there are large numbers of independent variables, it is possible that R2 will become artificially high simply because some independent variable's chance variations "explain" small parts of the variance of dependent variable.

Table 1.1 shows the various regression (R) values of influence of the independent variables on the dependent variable namely dividend per share. It is seen that R is 0.815, R2 is 0.664, and adjusted R2 is 0.659. R value of 0.815 shows that the regression model, to a considerable extent, is able to explain the relationship between the observed and predicted values of the dependent variable. R2 value of 0.664 implies that the correlation between the observed and predicted values of the dependent variable is 0.664 which means that about 66% of variation in the dividend per share is explained uniquely or jointly by the factors such as return on net-worth (RONW), return on capital employed (ROCE), return on net working capital (RONWC), EPS, net profit ratio, debt-equity ratio, current ratio, growth in fixed assets, interest coverage ratio, interest tax shield, reserves to share capital and degree of financial leverage.

Auto correlation is said to be present in time series data, where many variables tend to increase over time, such that knowing the value of the current observation helps one to estimate the value of the previous observation. The absence of autocorrelation means, the current values should not be correlated with previous values in a data series. The Durbin – Watson coefficient is used to test for autocorrelation. If the Durbin – Watson coefficient is between 0.5 and 2.5 it would indicate independence of observations. The Durbin – Watson coefficient in the analysis results was recorded as 0.916, which indicates the independence of observations.

**TABLE 1.2
ANOVA TABLE**

Model	Sum of Squares	DF	Mean Square	F	Significance
Regression	25788.447	12	2149.037	133.949	0.000
Residual	13027.522	812	16.044		
Total	38815.969	824			

The variations in the dependent variable are explained by the analysis of variance results. Table 1.2 of ANOVA displays the sum of squares, degrees of freedom and mean square for the two sources of variation, regression and residual. Since the regression sum of squares is higher than the residual sum of squares, the regression model accounts for most of the variation in the dependent variable. Hence with reference to the study companies the regression model accounts for most of the variation in the dependent variable. The results also reveal that the significance value of F is 0. This implies that the regression model is significant.

While the above analysis studies the impact of variables in total or all factors put together, the individual variable's contribution and its extent is also to be considered. The following analysis was undertaken to identify the selected variables' individual impact on the dividend per share and the results are shown in Table 1.3.

The unstandardised coefficients are the coefficients of the estimated regression model. Since the independent variables are measured in different units, the standardized coefficients or betas are calculated to make the regression coefficients more comparable. Beta (b) is the average quantum by which the dependent variable increases when the independent variable increases one unit when the other independent variables are held constant. The t-statistics helps to determine the relative importance of each variable in the model. The 't' values of the independent variables below – 2 or above 2 would make them useful predictors in explaining the variance of the dependent variable. With reference to the data the calculations were made and are shown in Table 1.3.

TABLE 1.3
CALCULATED COEFFICIENT VALUES OF INDEPENDENT VARIABLES ON DIVIDEND

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.544	.525		2.943	.003
Earning per Share	.239	.007	.870	36.585	.000
Net Profit Ratio	.034	.020	.047	1.734	.083
Tax Shield	.351	.302	.024	1.160	.246
Reserve to Share Capital	-.094	.014	-.155	-6.842	.000
Debt Equity Ratio	.067	.170	.010	.395	.693
Interest coverage Ratio	.004	.001	.114	5.413	.000
Return on Capital Employed	.052	.030	.075	1.714	.087
Return on Net Worth	-.136	.024	-.236	-5.555	.000
Current Ratio	-.166	.093	-.043	-1.779	.076
Return on Net working Capital	-.011	.005	-.052	-2.105	.036
Growth in Fixed Assets	.000	.001	-.016	-.790	.430
Degree of Financial Leverage	.000	.003	.001	.051	.959

Table 1.3 shows the calculated coefficients, t-values and levels of significance. The extent of relationship of each independent variable on the dependent variable has been ascertained from the calculations along with their statistical significance.

The 't' values show that the variables earning per share, reserve to share capital, interest coverage ratio, return on net worth and return on net working capital would serve as useful predictors while others do not. The significance value for the independent variable return on net worth is 0. This reveals that return on net worth has statistically influenced the dividend per share. But it is found to be negatively related with dividend per share. This means, return on net worth had not been an important factor in determining the dividend per share. Since the value is low, it had not been the dominant factor and there was a negative relationship. Similar is the case of variables return on net working capital and reserves to share capital.

The analysis reveals that interest coverage ratio and EPS had an impact on dividend per share. The significance value of 0.02 and 0.00 indicate that the interest coverage ratio and EPS were statistically significant at more than 98% level. Firms with strong earnings base prefer to go for liberal dividends. This is because earnings are an important factor in determining the dividend paying ability of the firm. Similar is the case of interest coverage ratio with a statistical significance value of 0. This is obvious, since commitment to debtors is theoretically an important determinant of dividends.

The significance value for the independent variable net profit ratio is 0.083 that of the independent variable current ratio is 0.076, that of debt equity ratio 0.69, that of return on capital employed is 0.087, that of fixed assets growth is 0.43, that of tax shield is 0.25 and that of the independent variable degree of financial leverage is 0.96 which indicates that these variables had no statistical significance in influencing DPS. This indicates that profitability as such had little impact compare to profit earned in relation to capital employed and net worth. An interesting point is that the degree of financial leverage has not significantly impacted dividends with reference to the study companies, even though they have a positive influence over the dividend.

The reliability of the regression results depends on the absence of multicollinearity and also that of auto correlation. To assess the multicollinearity, tolerance or variance inflation factor (VIF), which is built by regressing each independent variable on all the others, was used. A tolerance of less than 0.20 indicates existence of multicollinearity. A VIF value of above 4 suggests that multicollinearity problem exist. These

two aspects were calculated with reference to the variables.

TABLE 1.4
COLLINEARITY OF INDEPENDENT VARIABLES ON DIVIDEND

Variables	Tolerance	VIF
Earning per Share	0.731	1.367
Net Profit Ratio	0.562	1.778
Tax Shield	0.932	1.073
Reserve to Share Capital	0.801	1.249
Debt Equity Ratio	0.711	1.406
Interest coverage Ratio	0.924	1.082
Return on Capital Employed	0.216	4.621
Return on Net Worth	0.230	4.355
Current Ratio	0.709	1.411
Return on Net working Capital	0.667	1.500
Growth in Fixed Assets	0.998	1.002
Degree of Financial Leverage	0.994	1.006

table 1.4 gives the tolerance and variance-inflation factor values for the independent variables. The results regarding tolerance show that the values with reference to none of the variable are less than 0.20. This shows that all the variables have shown sufficient tolerance with reference to multicollinearity.

the variance-inflation factor values for the independent variables for return on capital employed and return on net worth were 4.6 and 4.4. This means that these two variables among themselves had changed in such a way that these internal changes had an impact on dividends. For the other ten variables VIF were not more than 4. This indicates that there is no multicollinearity among these independent variables. In other words most of the independent variables individually or in combination with other independent variables did not exert any influence on any other independent variable.

The above analysis clearly indicates that the identified variables had been the major determining factors, to the extent of nearly 66%, in determination of the dividend with reference to the selected companies. But it is also to be considered that there had been other factors which had not been identified in this study. There are a number of factors theoretically identified but empirically not quantifiable, which is likely to determine the dividend. With reference to the study companies these qualitative factors probably accounts for the remaining factors. But what is significant is that, the theoretically established factors have to a large extent been the factors determining the dividend policy of the selected companies.



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